

CLAIMS

1. A method of programming an electrically programmable memory,
5 comprising:

applying at least one first programming pulse to a group of memory
cells of an electrically programmable memory;

accessing the memory cells of the group to ascertain a programming
state thereof; and

10 applying at least one second programming pulse to those memory cells
in the group whose programming state is not ascertained to correspond to a
desired programming state, varying a voltage applied to a control electrode of
the memory cells between the at least one first programming pulse and the at
least one second programming pulse, wherein the varying the control
15 electrode voltage comprises:

forecasting a change in biasing conditions of the memory cells in
the group between the at least one first and at least one second programming
pulses; and

varying the control electrode voltage according to the forecasted
20 change in biasing conditions.

2. The method according to claim 1, further comprising:
 - repeating the steps of applying at least one first programming pulse, accessing, and applying at least one second programming pulse, until a programming state of all the memory cells in the group is ascertained to
- 5 correspond to a desired programming state.
3. The method according to claim 1, wherein the forecasting a change in biasing conditions comprises determining a number of memory cells in the group whose programming state is ascertained to correspond to a desired 10 programming state after applying the first programming pulse.
4. The method according to claim 3, wherein the varying the control electrode voltage comprises increasing, keeping constant or decreasing the control electrode voltage depending on the number of memory cells in the 15 group whose programming state is ascertained to correspond to a desired programming state after applying the first programming pulse.
5. The method according to claim 4, wherein the increasing, keeping 20 constant or decreasing the control electrode voltage comprises increasing the control electrode voltage if the number is lower than a first prescribed value, keeping constant the control electrode voltage if the number is higher than the first prescribed value but lower than a second prescribed value, and decreasing the control electrode voltage if the number is higher than the second prescribed value.

6. The method according to claim 5, further comprising:

repeating the acts of applying at least one first programming pulse, accessing and applying at least one second programming pulse until a programming state of all the memory cells in the group is ascertained to correspond to a desired programming state.

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7. The method according to claim 1, wherein the electrically programmable memory comprises at least one memory of type of at least one of EPROM, EEPROM, and Flash memory.

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8. A circuit for programming memory cells of an electrically programmable memory, comprising:

a circuit for applying programming pulses to selected groups of memory cells of an electrically programmable memory;

15 a variable voltage generator for supplying a variable programming voltage to a control electrode of the memory cells in the group; and

a program verify circuit for accessing the memory cells in the group, ascertaining a programming state thereof and causing programming pulses to be repeatedly applied to the memory cells in the group until the programming state thereof is not ascertained to correspond to a desired programming state, varying the control electrode voltage; wherein it comprises

means for forecasting a change in memory cell bias conditions between successive programming pulses and for causing the variable voltage generator to generate a voltage depending on the forecasted change in memory cell bias conditions.

9. The circuit of claim 8, wherein the means for forecasting a change includes means for counting a number of memory cells whose programming state is ascertained to correspond to a desired programming state after a programming pulse is applied.

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10. The circuit of claim 9, wherein the circuit for applying programming pulses includes a number of programming circuit branches equal to a number of cells in a selected group, the program verify circuit causing the programming circuit branches associated with the memory cells whose

10 programming state is ascertained to correspond to a desired programming state to be turned into a disabled state, and the means for counting the number of memory cells includes means for counting the number of programming circuit branches that are turned into a disabled state after a programming pulse is applied.

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11. The circuit of claim 10, wherein the means for forecasting comprises means for comparing the number of programming circuit branches that are turned into a disabled state after a programming pulse is applied to at least one prescribed number, the voltage generated by the variable voltage generator depending on the result of such comparison.

12. The circuit of claim 8, wherein the electrically programmable memory comprises at least one memory of type of at least one of EEPROM, EEPROM, and Flash memory.

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